CLAIMS:

1. A method of scaling a video image using a video scaling engine, which uses a clock selected between a video input clock and a display output clock, the method comprising:

receiving the video image;

determining whether it requires less memory space to scale the video image before writing the video image to memory or after reading the video image from the memory;

if it requires less memory space to scale the video image before writing the video image to the memory:

a) scaling the video image in the video scaling engine using the video input clock to generate a first scaled video image;

b) writing the first scaled video image to the memory;

c) reading the first scaled video image from the memory; and

d) outputting the first scaled video image; and

if it requires less memory space to scale the video image after reading the video image from the memory:

e) writing the video image to the memory prior to scaling;

f) reading the video image from the memory;

g) scaling the video image in the video scaling engine using the display output clock to generate a second scaled video image; and

h) outputting the second scaled video image.

2. The method of claim 1, wherein scaling the video image comprises scaling the video image up or down horizontally or vertically.

3. The method of claim 1, wherein the first scaled video image is a downscaled video image.

4. The method of claim 1, wherein the second scaled video image is an upscaled video image.

5. The method of claim 1, wherein determining whether it requires less memory space comprises determining whether the video image is to be downscaled or upscaled.

6. The method of claim 1, further comprising blending the first or second scaled video image with a graphics image to generate a blended video and graphics image.

7. A video scaler comprising:

an input for receiving a video image;

a scaler engine capable of both downscaling the video image to generate a first scaled video image and upscaling the video image to generate a second scaled video image, the scaler engine using a clock selected between a video input clock and a display output clock;

a memory capable of storing the video image or the first scaled video image; and

means for determining whether the video image is to be downscaled or upscaled.

8. The video scaler of claim 7, further comprising:

first means capable of receiving the video image to be upscaled from the input, receiving the first scaled video image from the scaler engine, and providing the video image to be

upscaled or the first scaled video image to the memory;

second means capable of receiving the video image to be downscaled from the input, receiving the video image to be upscaled from the memory, and providing the video image to be downscaled or the video image to be upscaled to the scaler engine; and

third means capable of receiving the first scaled video image from the memory, receiving the second scaled video image from the scaler engine, and outputting either the first scaled video image or the second scaled video image.

9. The video scaler of claim 8, further comprising fourth means capable of receiving and selecting between a digital video image and a digitized analog video image, and outputs the selected one of the digital video image and the digitized analog video image as the video image.

10. The video scaler of claim 7, wherein the scaler engine downscales the video image using the video input clock.

11. The video scaler of claim 7, wherein the scaler engine upscales the video image using the display output clock.

12. The video scaler of claim 7, further comprising a plurality of line buffers for providing the video image to the input.

13. The video scaler of claim 7, wherein the scaler engine comprises a horizontal scaler and a vertical scaler.

14. The video scaler of claim 13, wherein at least one of the horizontal scaler and the vertical scaler comprises a programmable

filter.

15. The video scaler of claim 7, wherein the scaler engine is a single physical device that is logically in both an upscale path and a downscale path of the video image.

16. A method of scaling a video image using a video scaling engine, which uses a clock selected between a video input clock and a display output clock, the method comprising:

receiving the video image;

determining whether it requires less memory bandwidth to scale the video image before writing the video image to memory or after reading the video image from the memory;

if it requires less memory bandwidth to scale the video image before writing the video image to the memory:

a) scaling the video image prior to storing it in the memory using the video input clock to generate a first scaled video image;

b) writing the first scaled video image to the memory;

c) reading the first scaled video image from the memory; and

d) outputting the first scaled video image; and

if it requires less memory bandwidth to scale the video image after reading the video image from the memory:

e) writing the video image to the memory prior to scaling;

f) reading the video image from the memory;

g) scaling the video image using the display output clock to generate a second scaled video image; and

h) outputting the second scaled video image.

17. The method of claim 16, wherein determining whether it requires less memory bandwidth comprises determining whether the video image is to be downscaled or upscaled.

18. The method of claim 16, wherein scaling the video image prior to storing it in the memory comprises downscaling the video image.

19. The method of claim 1, wherein scaling the video image using the display output clock comprises upscaling the video image.

20. The method of claim 16, further comprising blending the first or second scaled video image with a graphics image to generate a blended video and graphics image.